

# Memorandum

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**To:** Chairman William Keese, Presiding Member  
Commissioner, Robert Pernell, Associate Member

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**Subject:** **ISSUES IDENTIFICATION REPORT FOR THE EAST ALTAMONT ENERGY CENTER (01-AFC-4)**

Attached is the staff's Issues Identification Report for the East Altamont Energy Center proposal (01-AFC-4). This report serves as a preliminary scoping document that identifies the issues that the Energy Commission staff believes will require careful attention and consideration. Energy Commission staff will present the issues report at the Siting Committee's scheduled Informational Hearing on August 9, 2001, at the Holiday Inn Express in Tracy, California.

cc: Docket (01-AFC-4)  
Proof of Service List

Attachment

# **EAST ALTAMONT ENERGY CENTER**

(01-AFC-4)

July 18, 2001

## **ISSUES IDENTIFICATION REPORT**

**CALIFORNIA ENERGY COMMISSION**

**Systems Assessment and Facilities Siting Division**

**ISSUE IDENTIFICATION REPORT  
EAST ALTAMONT ENERGY CENTER  
(01-AFC-4)**

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# ISSUES IDENTIFICATION REPORT

California Energy Commission Staff

California Energy Commission staff has prepared this report to inform the Committee and all interested parties of the potential issues that have been identified in the case thus far. These issues have been identified as a result of our discussions with federal, state, and local agencies, and our review of the East Altamont Energy Center (EAEC) Application for Certification (AFC), Docket Number 01-AFC-4. The Issues Identification Report contains a project description and a summary of potentially significant environmental issues. The staff will address the status of issues and progress towards their resolution in periodic status reports to the Committee.

## PROJECT DESCRIPTION

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On March 29, 2001, East Altamont Energy Center, LLC (the applicant), a wholly owned subsidiary of Calpine Corporation, filed an AFC for a nominal 1,100 MW power plant called the East Altamont Energy Center (EAEC). The proposal is for a natural-gas-fired combined-cycle generating facility with a 230-kilovolt (kV) switchyard and approximately 0.5 miles of new 230-kV transmission lines. The applicant's proposed site lies within a 174-acre parcel of land under the applicant's control, located in unincorporated Alameda County, approximately 1 mile west of the San Joaquin County line and 1 mile southeast of the Contra Costa County line. The site is bordered by Byron Bethany Road to the north, Kelso Road to the south, and Mountain House Road to the west. If built, the plant would occupy up to 55 acres near the center of the property, with the remainder available for lease as agricultural land.

The switchyard would function as an extension of the Western Area Power Administration's existing Tracy substation, located across Mountain House Road and immediately to the west of the project's site. Natural gas for the facility would be delivered via approximately 1.4 miles of new 20-inch pipeline that will connect to Pacific Gas and Electric's (PG&E) existing gas transmission line southeast of the Bethany gas compressor station located to the west of the site.

The applicant plans to supply the plant's cooling and process water requirements (roughly 4,600 acre-feet per year) with raw (i.e. untreated) water from the Byron Bethany Irrigation District, via a 2.1-mile pipeline. As the community of Mountain House is developed and recycled water becomes available, recycled water would supplement raw water and result in a reduction in raw water use.

The project as proposed includes a zero-liquid discharge system designed to eliminate off-site disposal of wastewater. Process wastewater would be reclaimed and reused, to the extent possible. Cooling water would be cycled three to eight times (depending on water quality) in the cooling tower; wastewater would then be

directed to onsite evaporation ponds. "Sanitary" wastewater from sinks and basins would be discharged to an onsite septic tank and leach field.

Associated equipment would include emission control systems necessary to meet the proposed emission limits. NO<sub>x</sub> emissions would be controlled using a combination of low NO<sub>x</sub> combustors in the combustion turbine generators (CTGs) and selective catalytic reduction systems in the heat recovery steam generators (HRSGs). A carbon monoxide catalyst would be installed in the HRSGs to limit CO emissions from the CTGs.

The project is estimated to have a capital cost of between \$400 and \$500 million. The applicant plans to begin construction in June 2002 and complete construction in June 2004. The project would provide for a peak of approximately 400 construction jobs over a 2-year period and up to 40 skilled positions throughout the life of the project.

In addition, the plant's interconnection with Western's substation triggers the need for compliance with the National Environmental Policy Act (NEPA). Western will be the lead agency under NEPA and will be working jointly with the Energy Commission in the evaluation of this project.

## **POTENTIAL MAJOR ISSUES**

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This portion of the report contains a discussion of the potential issues the Energy Commission staff has identified to date. The Committee should be aware that this report might not include all of the significant issues that may arise during the case. Discovery is not yet complete, and other parties have not had an opportunity to identify their concerns. The identification of the potential issues contained in this report is based on staff's judgement, and comments from other government agencies regarding whether any of the following circumstances may occur:

- Potential significant impacts which may be difficult to mitigate;
- Potential areas of noncompliance with applicable laws, ordinances, regulations or standards (LORS);
- Areas of conflict or potential conflict between the parties; or
- Areas where resolution may be difficult or may affect the schedule.

The following table lists all the subject areas evaluated and notes those areas where critical or significant issues have been identified at this time. Even though an area may be currently identified as having no potential issues, it does not mean that an issue will not arise as staff moves further along in its analysis. For example, disagreements regarding the appropriate conditions of certification may arise between staff and applicant that will require discussion at workshops or even subsequent hearings.

Subject Area	Major Issue?	Subject Area	Major Issue?
Air Quality	Yes	Paleontological Resources	No
Biological Resources	No	Public Health	No
Cultural Resources	No	Socioeconomics	No
Efficiency and Reliability	No	Soils	Yes
Electromagnetic Fields & Health Effects	No	Traffic and Transportation	No
Facility Design	No	Transmission Line Safety	No
Geology	No	Transmission System Engineering	No
Hazardous Materials	No	Visual Resources	Yes
Industrial Safety and Fire Protection	No	Waste	No
Land Use	Yes	Water Resources	Yes
Project Overview	No	Alternatives	No
Noise	Yes		

This report does not limit the scope of staff's analysis throughout this proceeding, but acts to aid in the analysis of potentially significant issues that the EAEC proposal poses. The following discussion summarizes each potential issue, identifies the parties needed to resolve the issue, and where applicable, suggests a process for achieving resolution.

## AIR QUALITY

There are four major issues with air quality that could affect the licensing of the project:

- Whether the technology proposed by the applicant is the Best Available Control Technology (BACT).
- Whether the proposed particulate matter 10 microns and under (PM10) emission mitigation would effectively mitigate the project PM10 emission impacts.
- The project, under certain operational modes, may have a potential to cause a new violation of the state 1-hr nitrogen dioxide (NO<sub>2</sub>) ambient air quality standard.
- The applicant has not provided any mitigation for sulfur dioxide (SO<sub>2</sub>) emissions.

Detailed discussions of the four major issues follow:

1. Project conformance with BACT requirement: The applicant has proposed to use selective catalyst reduction (SCR) and oxidation catalysts to minimize the emissions of oxides of nitrogen (NO<sub>x</sub>) to 2.5 parts per million (ppm), and carbon monoxide (CO) to 6 ppm, while maintaining the slip of ammonia (NH<sub>3</sub>) emissions to 10 ppm. [Ammonia is a chemical that is used in conjunction with the SCR system to reduce the NO<sub>x</sub> emissions]. The EPA, however, has recently determined that the BACT for a combustion turbine combined cycle operation

should be set at 2 ppm for NO<sub>x</sub>, 2 ppm for CO and 5 ppm for ammonia. Staff will work with Calpine, the Bay Area Air Quality Management District (District) and the EPA staff to resolve this issue prior to the issuance of the District Preliminary Determination of Compliance (PDOC).

2. Effectiveness of the proposed PM<sub>10</sub> emission mitigation: Calpine has proposed to mitigate the project's PM<sub>10</sub> emissions by paving roads at various locations within a 65-mile radius from the project site. Because the project's direct PM<sub>10</sub> emissions and the proposed fugitive dust emission reductions from road paving are highly localized, staff does not believe that the proposed PM<sub>10</sub> mitigation package would provide effective mitigation of the project's PM<sub>10</sub> impacts.

In addition, the Air Resources Board (ARB) staff issued a letter stating that the use of fugitive emission reductions from paving of roadways may not be appropriate to mitigate PM<sub>10</sub> emissions from a combustion source such as the proposed project. The ARB staff maintains that the PM<sub>10</sub> from a combustion source, such as the proposed project, is comprised mostly of finer particles (particles that are less than 2.5 microns in diameter and can imbedded deeply in the lung), which are not the same type of particles as those from unpaved roadways.

Staff proposes that Calpine re-evaluate their proposed mitigation, allowing for the fact that only a portion of emission reduction from paving of roads is for particles less than 2.5 microns. In addition, staff will need to work closely with Calpine and the District to locate local PM<sub>10</sub> emission reduction sources that can be used to mitigate the project PM<sub>10</sub> emissions.

3. Potential new violations of the air quality standard: Calpine has been using an approved modeling method to assess the proposed project emissions' impacts. The model, however, employs a formula that could underestimate the project's NO<sub>2</sub> emission impacts if the wrong assumptions are used. Corrections to this modeling deficiency may reveal that the project's NO<sub>2</sub> emissions could exceed the state 1-hour NO<sub>2</sub> ambient air quality standard. Because the area is currently in attainment for this standard, a new violation could mean that the project may not be able to obtain a permit from the District. Staff will work with Calpine and the District to explore further modeling options to assess the project's emissions impacts.
4. Mitigation for SO<sub>2</sub>: Calpine has not proposed to provide any emission reduction credits to mitigate the project's SO<sub>2</sub> emissions because mitigation would not be required under District rules. Staff believes that the project's SO<sub>2</sub> emissions will need to be mitigated for two reasons: 1) Calpine has underestimated the project's SO<sub>2</sub> emissions by assuming a low sulfur content for the natural gas supply, and 2) because SO<sub>2</sub> is a precursor to PM<sub>10</sub>, the project SO<sub>2</sub> emissions will contribute to the existing PM<sub>10</sub> violations. Staff will work with Calpine to find an acceptable solution to this issue.

## LAND USE

Calpine is proposing to build the EAEC on land that is defined as “Prime Farmland” as shown on AFC Figure 8.9-2 and the Alameda County Important Farmland 1998 map prepared by the California Department of Conservation, Division of Land Resources Protection, 1999.

The applicant proposes the conversion of a 55-acre portion of a 174-acre agricultural property for the development of the project. The applicant proposes to lease the remaining 119 acres within the parcel for agricultural use.

Policy 75 of the East County Area Plan of the Alameda County General Plan (ECAP) promotes conservation of prime soils. Specifically, Policy 75 states:

“The County shall conserve prime soils (Class I and Class II, as defined by the USDA Soil Conservation Service Land Capability Classification) and Farmland of Statewide Importance and Unique Farmland (as defined by the California Department of Conservation Farmland Mapping and Monitoring Program) outside the Urban Growth Boundary.”

Policy 76 of the ECAP states

“The County shall preserve the Mountain House area for intensive agricultural use.”

The proposed site is located outside of an Urban Growth Boundary and is designated “Large Parcel Agricultural” by the Alameda County General Plan. The site is located within an Alameda County agricultural (“A”) zone district.

Section 17.060.010 of the Alameda County General Ordinance Code states

“A [Zone] districts are established to promote implementation of general plan land use proposal for agricultural and other nonurban uses, to conserve and protect existing agricultural uses, and provide space for and encourage such uses in places where more intensive development is not desirable or necessary for the general welfare.”

The loss of at least 55 acres of prime agricultural land potentially represents an issue of a LORS non-conformity with the County of Alameda County’s General Plan Policy 75, 76 and Zone Section 17.060.010. The loss of prime agricultural land also presents a potential significant impact under the California Environmental Quality Act (CEQA) if it is not mitigated.

Staff will evaluate the project’s consistency with County of Alameda’s ECAP Policy 75 and 76 and Zone Section 17.060.010 and will look to the county for their determination on this matter as well. Further, staff will encourage the applicant to



work with the County of Alameda to establish an appropriate form of mitigation for the loss of prime agricultural land. Mitigation may include providing an agriculture/open space easement dedication, or paying an in-lieu fee to fund the purchase of land for agricultural/open space and provide an endowment for its ongoing management.

## **NOISE**

The applicant has stated that “an increase of more than 5 dBA in a very quiet environment may not necessarily result in an adverse effect.” The analysis presumes that compliance with the 45 dBA criterion of the LORS will be sufficient to avoid a significant noise effect, mitigated by the offer to provide additional sound insulation for affected residences. Energy Commission staff notes that the applicant’s data indicates compliance with the 45 dBA criterion would result in an increase of 14 dBA at measurement site 1. This is likely to be excessive in view of the reported background noise levels, which were in the range of 35 dBA.

However, staff will carefully consider the question of establishing a reasonable and practical noise standard for very quiet environments. For example, staff notes that certain local noise ordinances and models establish lower limits for the ambient noise standard. In addition, it is known that the rate of change in public annoyance due to transportation noise sources, as a function of change in noise levels, is lower at low levels of noise than at relatively high levels of noise. It is also true that the amount of acoustical energy associated with noise levels in the range of 35 to 40 dBA is very small, corresponding to sources such as insects and breezes in trees. With these concepts in mind, staff will evaluate the practical effects of setting a noise standard which allows a greater than 5 dBA increase in background noise levels, while limiting the noise level to the maximum practical extent.

## **SOILS**

The applicant proposes to develop land zoned as Prime Agricultural Land under the East Alameda County Area Plan (EACAP). As described under the land use section of this report, Policies 75 and 76 of the EACAP Zone Section 17.060.010 promote conservation of prime soils and preservation of land for intensive agricultural use. Of the 174-acre parcel, EAEC proposes to develop 55 acres of land, of which 10 acres would be dedicated to two evaporation ponds, five acres would be used as a wastewater recycle pond, and approximately two acres would be used for a stormwater detention pond. The evaporation and wastewater recycle ponds are proposed as an element of a wastewater treatment process that would allow evaporation of wastewater and yield zero discharge to surface waters off-site.

Options that the applicant could explore for reducing their impacts to prime agricultural land include dry cooling, which would eliminate the need for evaporation ponds, or a brine crystallizer, which crystallizes the brine effluent and allows the liquid portion recycled for cooling purposes. Staff will be working with the applicant

to explore these and other options for minimizing the project's impacts to prime agricultural land.

## **VISUAL RESOURCES**

Based on a review of the East Altamont Energy Project AFC and supplements, responses to Data Requests Set 1, as well as a field reconnaissance of the project site and area, the following issues of concern have been identified:

1. The proposed project would result in the addition of industrial facilities to a predominantly rural landscape that does not contain similar structures. Although there are numerous transmission lines in close proximity to the proposed project site, and the Tracy Substation is located across Mountain House Road from the proposed site, the geometric forms of the proposed project facilities would appear substantially larger in scale and more massive than any of the existing structures in the project vicinity. The project structures would be visible from two county designated scenic routes (Mountain House Road and Byron – Bethany Road) and the proposed landscaping may not adequately screen the project from those views or within a reasonable time frame. Therefore, the project with the mitigation proposed by the Applicant may cause a significant visual impact.

Staff will evaluate the applicant's revised project and landscaping simulations and conduct a field analysis of the existing landscape characteristics and affected public views. If staff finds that proposed project structures would cause significant visual impacts, staff will evaluate mitigation opportunities to lessen structural prominence and increase project blending with the existing landscape. However, feasible mitigation measures may not reduce the impacts to less than a significant level, and the applicant may not agree to any mitigation measures that staff may propose.

2. The proposed project would be located in a rural landscape that is characterized by level terrain and panoramic views. Although the landscape in the immediate vicinity of the proposed project site is dominated by energy infrastructure, the proposed project's plumes could be visible from areas well beyond the project's vicinity. Viewing opportunities would occur along Interstates 205 and 580 (state officially designated Scenic), as well as other local scenic routes and roads including Byron Bethany Road (scenic), Mountain House Road (scenic), Mountain House Parkway, Grant Line Road, Kelso Road, and other local roads. The plumes would also be visible from Bethany Reservoir State Recreation Area, Clifton Court Forebay, portions of the Livermore Yacht Club, other Delta recreational waterways, Brushy Peak (at a distance of 7 miles), and Mount Diablo State Park (potentially though at a distance of 19 miles). The plumes would also be potentially visible from the western portions of the City of Tracy. Plume visibility could potentially result in a significant visual impact given the general lack of other similar visual features in the project vicinity and opportunities for extended viewing distances. The Applicant has not proposed mitigation for this potential impact.

Staff will conduct a plume analysis to determine plume dimensions and frequency of occurrence. A plume significance determination will be based on an evaluation of the size and frequency of project plume(s) within the context of the existing landscape character, the visibility of other plumes, and public visual access within the plume viewshed. If project plume occurrence is determined to be significant, staff will evaluate mitigation opportunities to eliminate, minimize, or lessen plume frequency and/or size. However, the applicant may not agree to mitigation measures that staff may propose.

## **WATER RESOURCES**

The applicant proposes to use fresh surface water supplied from Byron Bethany Irrigation District (BBID), requiring an average annual supply of 4,600 acre-feet (AF), and a peak annual supply of up to 7,000 AF. The vast majority of this water demand is to be used for the proposed mechanical draft evaporative wet cooling process. Recycled water is proposed as an eventual source from a wastewater treatment facility that must first be determined feasible and then developed. According to the AFC, recycled water will not be available for at least 20 years and then it is only expected to provide approximately half of the total water supply. Significant reductions in fresh water use could be achieved if either recycled water or alternative cooling tower technology were found to be economically viable and environmentally sound. The State Water Resources Control Board (SWRCB) Resolution 75-58 states that use of fresh inland waters for power plant cooling is only warranted when the use of other water supplies or other methods of cooling would be environmentally undesirable or economically unsound. California Water Code Section 13550 considers use of potable domestic water for industrial purposes a waste, and an unreasonable use if recycled water is available of adequate quality and at reasonable cost. Staff will be analyzing the use of alternative water supplies and cooling methods for the proposed project.

## **PROCEDURAL ISSUES**

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Staff has begun its analysis of the potential issues identified above, as well as the assessment of other environmental and engineering aspects of the applicant's proposal. The first step in that assessment will be the issuance of data requests to the applicant in a number of technical areas. Over the next few months, staff will conduct publicly noticed workshops in the vicinity of the proposed power plant to address the identified concerns.

## **SCHEDULING**

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Staff's initial findings regarding the major issues discussed above, as well as other environmental and engineering findings will be presented in the PSA, which staff proposes to file on December 14, 2001. After filing the PSA, staff will conduct public workshops to discuss its findings, recommendations and proposed conditions of certification. Based on these workshop discussions and other information that may

be provided, staff will present its conclusions and recommendations in the Final Staff Assessment that staff proposes to file on January 23, 2002.

Staff's ability to meet the projected PSA and FSA dates depends on a number of factors, such as the applicant's timely responses to staff's data requests. To remain on schedule, the issues presented in this report must be resolved, which necessitates timely and thorough responses from the applicant.

In addition, the AFC schedule is dependent upon the permitting agencies fulfilling their responsibilities in a timely manner. To assist in this regard, the California Legislature passed SB 1388 (in effect on January 1, 2001) which requires local and state agencies which normally would have jurisdiction over a proposed project, to respond with comments and recommendations within 180 days of the filing of a complete project application. Key agencies to this particular project include the Western Area Power Administration (WAPA), the Bay Area Air Quality Management District (BAAQMD), and the Central Valley Regional Water Quality Control Board (CVRWQCB). Western and Energy Commission staff will need to exhibit a high degree of coordination to meet our joint NEPA/CEQA requirements without causing undue delays. At this time, staff does not anticipate any scheduling problems due to this need for coordination with Western. The Bay Area Air Quality Management District expects to file its Preliminary Determination of Compliance (PDOC) by November 4, 2001, which is timely for the PSA. Finally, the Energy Commission has a Memorandum of Understanding in place with the Water Quality Control Board, under which the CVRWQCB would provide Waste Discharge Requirements for cooling water and stormwater discharge in time to be incorporated into staff's assessments.

Staff will work with the agencies to facilitate the timely issuance of their final reports. Staff will also issue monthly status reports to the Committee to keep them apprised of staff's resolution of issues and identification of new issues if they arise.